

Which of the following metal is attributed for causing the Minamata disease, a neurological syndrome that killed almost 2000 people in Japan last century?

- A. Cd      B. Pb      C. Ag      **D. Hg**

In 1950s, Chisso Co. Ltd. was producing a large amount of acetaldehyde made through catalysis. One of the catalyst they used was mercury, and methyl mercury was a side product from the catalytic cycle. They released methylmercury directly into the river allowing organisms in the water to digest the mercury. Fish ate the smaller organisms leading to biomagnification, then the people living nearby ate the fish causing Minamata disease. It was documented that people with this disease were seen running hysterically on the street and saying unknown things loudly. Images of the symptoms are quite disturbing, depicting children with bones bending at a weird angles.<sup>1</sup>

A similar industrial disaster occurred in 1984 when Union Carbide India Limited accidentally it released methyl isocyanate in the air unleashing it on the 500,000 inhabitants of Bhopal, Madhya Pradesh, many of whom were living in shanty-towns near the plant.<sup>2</sup>

These early catastrophes lead to greater regulation throughout a variety of industries. However, as chemists we need to keep such incidents in the fore-front of our minds when designing new processes to ensure we can minimize any harmful ecological effects.

1. Harada, M. "Minamata Disease: Methylmercury Poisoning in Japan Caused by Environmental Pollution" *Critical Reviews in Toxicology* **1995**, 25, 1.
2. Roli, V.; Varma, D. R.; "The Bhopal Disaster of 1984". *Bulletin of Science, Technology and Society*, **2005**